

24 MARCH 1998



Weather

WEATHER SUPPORT

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This instruction implements *AFPD 15-1, Atmospheric and Space Environmental Support*. It identifies the specific support services and related responsibilities performed by the Weather Flight (75th OSS/OSW) for the Ogden Air Logistics Center (OO-ALC), tenant units, and all other agencies associated with Hill AFB, Utah and outlines the responsibilities of supported organizations.

SUMMARY OF REVISIONS

This revision updates this instruction to comply with latest Air Force Weather guidance. Significant changes include; the inclusion of Salt Lake City International on the dissemination list for observations and forecasts taken from the alternate weather station location, the inclusion of a table describing weather phenomena reported in weather observations, removal of all references to cloud ceilings designation, added SPECI criteria for Runway Visual Range, added forecast specification and amendment criteria for Low Level Wind Shear, and added Great Salt Lake temperature requirement for Utah Test and Training Range forecast specification, added significant weather notification matrix, adjustment of the desired lead time for all weather warnings to 60 minutes, changed the lightning potential advisory to an observed lightning within 10 nautical miles advisory, changed the lightning observed within 5 nautical miles advisory to an observed warning, and added a lightning watch for lightning within 25 nautical miles or 30 minutes.

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Chapter 1

OVERVIEW

1.1. General. This instruction implements policies for weather support documentation in accordance with *AFPD 15-1, Atmosphere and Space Environmental Support* and *AFMCPD 15-1, Weather Support Policy*. The 75 Operations Support Squadron, 75 OSS/OSW is located on the north side of Building 1. The 75 OSS/OSW provides or arranges for weather support to OO-ALC and tenant units.

1.2. Terms Explained:

1.2.1. Automated Weather Distribution System (AWDS). A computer-communication database system consisting of a computer in the Base Weather Station (BWS) and remote terminals with alpha-numeric monitors at various locations on and off base.

1.2.2. Base Weather Station (BWS). 75 OSS/OSW is located on the north side of Building 1.

1.2.3. Basic Weather Watch (BWW). Conducted from the BWS by an observer who, because of other duties, cannot monitor the weather continuously. In addition to taking and disseminating required record observations each hour, the BWW program requires that the observer recheck weather conditions at intervals not to exceed 20 minutes.

1.2.4. Cooperative Weather Watch (CWW). A CWW is established between air traffic control (ATC) and the BWS. The occurrence of previously unreported weather conditions which could affect flight safety or which could be critical to the safety or efficiency of other local operations and resources are of primary concern.

1.2.5. Coordinated Universal Time (UTC). An atomic time scale that is the basis for broadcast time signals. In practice, it is the universally accepted time of reference.

1.2.6. Desired Lead-Time (DLT). The amount of advance notice a supported agency requires to complete necessary actions prior to the onset of an established weather event.

1.2.7. Distant (DSNT). Used to forecast weather phenomena expected beyond 10 statute miles.

1.2.8. Meteorological Watch (Met-Watch). The process of actively comparing observed weather conditions with those forecasted and updating forecasts with the latest information.

1.2.9. Pilot to Metro Service (PMSV). A Ultra High Frequency (UHF) radio service (375.2 MHz) that allows air crews to contact weather personnel for updated weather conditions and to pass on significant flight weather reports.

1.2.10. Pilot Report (PIREP). A report of observed flight weather conditions usually passed to weather personnel through the PMSV radio.

1.2.11. Severe Weather. Established weather conditions that are deemed to pose a hazard to flight safety, property, or life. Examples include but are not limited to tornadoes, heavy snow, and winds greater than 50 knots.

1.2.12. Terminal Aerodrome. The area within a 5 nautical mile radius of the center point of the Hill AFB runway complex.

1.2.13. Terminal Aerodrome Forecast (TAF). A 24-hour forecast for cloud layers, prevailing visibility, weather obstructing visibility, surface winds, altimeter setting, and icing and turbulence from the surface to 10,000 ft mean sea level (MSL).

1.2.14. Thunderstorm. Atmospheric condition consisting of lightning, thunder, and heavy precipitation. Potential exists for gusty winds, hail, severe turbulence, icing, and wind shear.

1.2.14.1. Severe (SVR) Thunderstorm. A thunderstorm capable of producing winds 50 knots or greater and/or hail 3/4 inches or greater.

1.2.14.2. Strong (STR) Thunderstorm. A thunderstorm capable of producing winds 35 to 49 knots and/or hails 1/2 inch to less than 3/4 inch.

1.2.14.3. Weak Thunderstorm. A thunderstorm capable of producing winds 25 to 34 knots and/or hails less than 1/2 inches in diameter.

1.2.15. Toxic Corridor. The evacuation area downwind of a toxic chemical spill.

1.2.16. Vicinity (VC). The area between five and ten statute miles of the center point of the Hill AFB runway complex.

1.2.17. Weather Advisory. A special message disseminated via AWDS, which notifies of established weather conditions that require certain protective actions by various base agencies.

1.2.17.1. Observed Advisory. An observed weather advisory will be issued only when established weather conditions are actually observed to be occurring at the terminal aerodrome. These advisories will be canceled when the conditions are no longer being observed.

1.2.17.2. Forecast Advisory. A forecast advisory will be issued when an established weather condition is expected to occur. Advisories will be amended, upgraded, or canceled as required to accurately reflect conditions. Advisories issued for Hill AFB are for conditions forecast to affect the terminal aerodrome.

1.2.18. Weather Warning. A special message transmitted over AWDS to highlight established weather conditions that require certain protective actions by various base agencies. A weather warning will be issued when an established weather condition of such intensity as to pose a hazard to flight safety, property, or life is occurring or is expected to occur. Warnings will be amended, upgraded, or canceled as required to accurately reflect conditions. Warnings issued for Hill AFB are for conditions forecast to affect the terminal aerodrome.

1.2.19. Weather Watch. A special message transmitted over AWDS to advise supported agencies of the potential for an established weather condition to occur. If required, weather watches will be upgraded to weather warnings. Agencies should review required actions.

Chapter 2

WEATHER STATION OPERATIONS

2.1. Operating Hours. The 75 OSS/OSW provides continuous 24-hour, seven-day per week weather services. These services include surface weather observations, weather forecasting, weather warnings/advisories, and weather briefings. Staff, liaison, climatic, and technical support are also available during normal duty hours or as previously coordinated. Where possible, this support is accomplished in the weather station.

2.2. Duty Priorities. All base agencies, aircrew, and weather personnel must ensure higher priority tasks are completed first. Weather station duty priorities are listed below. Requests for changes to these duty priorities must be submitted to the Weather Flight Commander (WFC).

- 2.2.1. Emergency War Order (EWO) tasks.
- 2.2.2. Aircraft and ground emergencies.
- 2.2.3. Respond to Supervisor of Flying (SOF) hotline.
- 2.2.4. Take and disseminate observations locally.
- 2.2.5. Respond to Pilot-to-Metro Service (PMSV) radio contacts.
- 2.2.6. Disseminate weather warnings and advisories locally.
- 2.2.7. Disseminate significant PIREPs locally.
- 2.2.8. Answer other hotlines.
- 2.2.9. Monitor weather radar for severe weather criteria.
- 2.2.10. Provide flight weather briefs.
- 2.2.11. Disseminate weather reports longline.
- 2.2.12. Issue TAFs and area forecasts.
- 2.2.13. Provide other weather briefs.
- 2.2.14. All other duties.

2.3. Release of Weather Information. Operations security and communications security will be considered prior to any release of weather information. Specific restrictions do not exist on the dissemination of weather information to other military agencies. Information exchange between the BWS and the local National Weather Service office is encouraged in the interest of public safety and resource protection. Routine working agreements will be maintained in writing from either agency. Support to other non-military agencies, foreign governments, or individuals, will be coordinated with the Staff Judge Advocate (OO-ALC/JA) before service or information can be provided. All direct media requests for weather information will be approved by the host-wing public affairs office. This restriction does not include indirect routine weather information which is passed on automated weather circuits or information passed through the National Weather Service in the interest of public safety.

2.4. Alternate Operating Location for Weather Support. Both the observing and forecasting services will relocate to an alternate site in the event of an emergency which could impact Building 1. The duty observer and forecaster will not relocate for exercises unless qualified personnel are available to man the weather station during their absence. The primary back-up weather station is the Air Traffic Control Tower. Access to a Class A telephone and the catwalk will be required. If available, a back up radio will be set to 375.2 MHz for PMSV support. When evacuated, the duty forecaster will notify Hill Command Post that weather is relocating and to phone patch PMSV contacts to the alternate location. Alternate forecast/observer kits will be kept in the BWS and available for immediate relocation

2.4.1. Observing Services. Limited weather observations will be taken from the alternate site and provided to the air traffic control tower, clover control, and the Salt Lake City TRACON. These observations will include sky condition, visibility, winds, altimeter setting, pressure altitude, temperature, dew point, and weather and obstructions to vision.

2.4.2. Forecasting Services. Limited forecast services will be conducted from the alternate site and provided to the air traffic control tower, clover control, and Salt Lake City TRACON. All weather watches, warnings, and advisories which would normally be disseminated using AWDS, will be passed to AWDS users via telephone.

2.4.3. Flight Weather Briefings. Due to limited access to weather information, if the evacuation is expected to be lengthy, flight crews will be instructed to contact Tinker AFB, OK (DSN 884-3196), Mountain Home AFB, ID (DSN 728-6303), or Fairchild AFB, WA (DSN 657-5514) for support until forecast and observing service is restored at the BWS.

2.5. Severe Weather Management. The duty forecaster or observer will contact the Chief, Weather Station Operations (CWSO), who will then contact the WFC, whenever the potential exists for severe weather at Hill AFB. The WFC or CWSO will determine requirements to activate the Severe Weather Management Cell (SWMC) and bring in Operations Standby personnel to ensure adequate manning is available to provide comprehensive weather watch during the threat period. Weather support during periods of severe weather will be limited to mission essential to ensure critical weather information is relayed in a timely manner.

Chapter 3

WEATHER OBSERVING SERVICES

3.1. Official Observing Location. Routine weather observing services are provided from approximately 200 feet north of the BWS in Building 1. Observations are hampered from this point to the south due to building obstructions, by ramp floodlights at night, and by ramp noise.

3.2. BWW: The observer performs a BWW from the weather station. When significant changes in the weather are expected or detected, the observer will evaluate the need to take special or local observations. This will be done at an interval not to exceed 20 minutes when any of the following conditions are observed or forecast to occur within one hour:

- 3.2.1. Ceiling 1500 feet or less.
- 3.2.2. Visibility 3 miles or less.
- 3.2.3. Precipitation (any form).
- 3.2.4. Fog.

3.3. CWW. To augment the BWW, a CWW has been established in which ATC personnel provide additional weather information to the observer when significant weather phenomena are detected. Significant phenomena include, but are not limited to, precipitation, lightning, and reduced visibility.

3.4. Surface Weather Observations. The duty weather observer takes, records, and disseminates an official observation from the official observing location before every hour. All weather observations at Hill AFB are taken in accordance with instructions in *AFMAN 15-111, Surface Weather Observations*. The following are the elements observed by the BWS observer and disseminated locally and longline, in the order they appear in the observation, for use by various agencies using the AWDS:

3.4.1. Time. All time entries on AWDS will be in UTC.

3.4.2. Wind Speed and Direction. A printed recording of the two-minute averaged wind speed and direction is made every minute. Wind direction is reported to the nearest ten degrees and speed to the nearest whole knot. Wind direction is transmitted true for longline dissemination and magnetic for local dissemination.

3.4.3. Prevailing Visibility. This is defined as the greatest visibility equaled or exceeded in at least half of the horizon circle, not necessarily continuous. Prevailing visibility is a visual determination made by the observer. When the visibility, either as seen by the observer or reported by ATC personnel, is below four miles, the lowest visibility reported will be used for aircraft operations. Obstructions to vision will be determined by the observer and reported when the prevailing visibility is six statute miles or less, except in the case of precipitation, which is reported when, it occurs. All visibilities are reported in statute miles.

3.4.4. Runway Visual Range (RVR). RVR is reported immediately following the prevailing visibility. RVR will be reported when the prevailing visibility is one statute mile or less, or when the RVR is 6,000 feet or less.

3.4.5. Weather and Obstruction to Vision. This consists of both weather and non-weather phenomena, which are observed and/or restrict visibility. The table below identify the more common phenomena and the observing code used:

Table 3.1. Common Phenomena and Observing Code

QUALIFIER		WEATHER PHENOMENA		
Intensity or Proximity	Descriptor	Precipitation	Obscuration	Other
- Light	MI Shallow	DZ Drizzle	BR Mist	PO Well-
			(Visibility > 1000m)	Developed
Moderate	PR Partial	RA Rain	FG Fog (Vis < 1000m)	Dust/Sand Whirls
+ Heavy	BC Patches	SN Snow	FU Smoke	SQ Squalls
	DR Low Drifting	SG Snow Grains	VA Volcanic Ash	FC Funnel Cloud(s)
developed in	BL Blowing	IC Ice Crystals	DU Widespread	(Tornado or
the case of	SH Shower(s)	(Diamond Dust)	Dust	Waterspout)
dust/sand	TS Thunderstorm	PE Ice Pellets	SA Sand	SS Sandstorm
whirls, dust	FZ Freezing	GR Hail	HZ Haze	DS Duststorm
devils and	(Supercooled)	GS Small Hail and/or	PY Spray	
tornadoes/		Snow Pellets		
VC Vicinity		UP Unknown		
(5-10 statute miles)		Precipitation		

3.4.6. Sky Condition. This consists of sky coverage (SKC = 0/8, FEW = 1/8-2/8 of the sky covered, SCT = 3/8-4/8 of the sky covered, BKN = 5/8-7/8 of the sky covered, OVC = 8/8 of the sky covered) and height above ground level (AGL) in hundreds of feet. The lowest layer covering 5/8 of the sky is the ceiling. Heights of ceilings less than 12,000 feet may be measured using the laser beam ceilometer. When a measurement cannot be obtained, ceiling heights are determined visually, using Doppler radar returns, upper air reports, and from aircraft flying in the local area.

3.4.7. Temperature and Dew Point. Instantaneous readings of temperature and dew point are available from the mid-field sensors. Readings are reported in degrees Celsius.

3.4.8. Altimeter Setting. Altimeter setting values are determined using a digital barometer and transmitted on all observations, except for some single element observations (i.e., tornadoes). Altimeter setting is reported to the nearest hundredth of an inch of mercury.

3.4.9. Sea-Level Pressure (SLP). This is the atmospheric pressure at mean sea level empirically determined from the observed station pressure. SLP is reported in millibars.

3.4.10. Remarks. Significant remarks will be disseminated on all observations to present a more precise picture of existing weather conditions.

3.5. Types of Observations. The following types of observations are made by the duty observer: Aviation Routine Weather Report (METAR), Aviation Select Special Weather Report (SPECI), and Local Surface Observation (LOCAL). Attachments 1 and 2 list the special and local observation criteria respectively. All observations are sent to local base agencies using the AWDS. All observations, except locals, are also sent into the Automated Weather Network (AWN) for use by non-base agencies. In the event of an AWDS outage, local dissemination will be accomplished as outlined in paragraph 2.4.1 and longline dissemination will be done by an alternate base weather station.

3.5.1. Aviation Routine Weather Report (METAR). METAR observations are taken between 45-55 minutes past the hour and transmitted between 55-59 minutes past the hour, 24 hours per day. Elements included in METAR observations are listed in paragraph 3.4.

3.5.2. Aviation Select Special Weather Report (SPECI). SPECI observations are taken when the conditions for special criteria are met. The established criteria for special observations are listed in Attachment 1. Specials contain all elements included in a METAR Observation, except for sea-level pressure. Single element specials may be made only when time is critical and encoding all elements would jeopardize life or property, for example, tornadoes. These single element specials will contain only the time and the element, which required the observation.

3.5.3. Local (LOCAL). LOCAL observations are taken when conditions for local criteria listed in Attachment 2 are met. LOCAL observations contain the same elements as a SPECI but are only transmitted locally. Single element LOCAL observations are taken for RVR and altimeter settings.

3.6. Additional Requirements. Equivalent Chill Temperature (ECT), commonly known as “wind chill”, will be appended to each hourly observation when the ECT is -18 degrees Celsius (0 degrees Fahrenheit) or less. Additionally, when advisories have been issued for potential and observed lightning for Hill AFB, local observations will include the latest information on direction and distance of thunderstorms.

3.7. Observing Instrumentation. The Hill AFB runway has instruments at various locations on the airfield. Readouts from this equipment and the digital barometer are all located in the BWS. Attachment 3 lists the weather sensors and their approximate location on the airfield.

3.8. Eagle Range Observations. Observations from Eagle Range will be taken by personnel at the range as outlined in a letter of agreement between Eagle Range and the BWS. Eagle Range personnel will call observer, duties permitting, when criteria in the letter of agreement are met. The duty observer may also call the Eagle Range Tower and request an observation. The observer will transmit Eagle Range observations locally over the AWDS.

3.9. Radar. The 75 OSS/OSW operates a Primary User Processor (PUP) off of the main Weather Surveillance Radar - 1988 Doppler (WSR-88D) computer operated by the National Weather Service (NWS) Office in Salt Lake City, Utah. The WSR-88D is a sophisticated weather radar capable of detecting not only all types of precipitation, but clouds and wind information as well. The NWS in SLC and 75 OSS/OSW work together to ensure operation of the radar meet the needs of both parties. The antenna and

transmitter are located atop Promontory Point. Dial-in capability to other WSR-88D radar sites is available for flight weather briefs.

Chapter 4

FORECASTING SERVICES

4.1. General. The BWS forecast section is open 24 hours a day, seven days a week. Forecast services consist of local weather forecasts, flight weather briefings, staff briefings, and a meteorological watch program (METWATCH). The METWATCH program includes advisories, watches, warnings, and flight or route weather. Weather advisories, watches, and warnings are covered in Section E of this publication.

4.2. Terminal Aerodrome Forecasts (TAF). The duty forecaster issues a 24-hour Terminal Aerodrome Forecast (TAF) for Hill AFB at approximately 0100Z, 0700Z, 1300Z, and 1900Z (Z= UTC). These forecasts apply to an area within a five-mile radius of the center of the runway complex at Hill AFB. The TAF will specify elements listed in Attachment 4 with the time of expected occurrence to the nearest hour and the intensity, when applicable.

4.3. TAF Amendments. TAF amendments are unscheduled forecast updates, which revise the content of the current forecast. Amendments cover the remaining period of the original forecast. TAF amendments are issued whenever any of the amendment criteria listed in Attachment 5 are expected to occur before the next scheduled TAF, and this previously unforecast condition is expected to last for 30 minutes or longer or if that condition exists for more than half of the forecast period. Amendments are also issued when a forecast change of any of the criteria listed in Attachment 5 does not occur by the hour specified in the forecast and is not expected to occur within the next 30 minutes.

4.4. TAF Dissemination. The primary means for dissemination of the TAF and amendments is via the AWDS. The elements included are time, wind direction, wind speed, visibility, obstructions to vision, sky cover, cloud height, icing, turbulence, minimum altimeter, and significant remarks. If the AWDS is inoperative, the forecast will be disseminated to the tower, Clover Control, and Salt Lake City TRACON by telephone.

4.5. Utah Test and Training Range (UTTR) Forecast. A range weather forecast is prepared and transmitted over AWDS two hours prior to range opening time. The forecast is valid for the entire time the UTTR is open. The forecast will specify elements listed in Attachment 6. Amendments to the weather forecast are issued in accordance with Attachment 7. The forecast should be used as a weather pre-brief. A verbal update should be received prior to departure. Additional weather support requirements for activities in the UTTR should be coordinated with 75 OSS/OSW at least one day prior to ensure adequate support can be provided.

4.6. Temperature and Pressure Altitude Planning Forecast. A planning forecast of temperature and pressure altitudes in three-hour increments for Hill AFB is issued daily. This planning forecast is amended if the temperature is more than 3 degrees Celcius or more than 100 feet in error at any of the forecast periods.

4.7. Telephone Recording. A 24-hour public service forecast (updated four times daily), a 5-day forecast (updated once a day Mon.-Fri.), and monthly Climatological data (updated the first working day of the month) for Hill AFB are available by calling 777-2643. These recordings are updated as duties permit and are for non-operational use only.

4.8. Electronic Bulletin Board Forecast. A 5-day forecast is also available on the Hill AFB bulletin board. This forecast is updated Monday through Friday as duties permit and is for non-operational use only.

4.9. Weather Internet Homepage. The weather flight maintains a homepage on the World Wide Web. A wide variety of weather information is available from this site. This information is for planning purposes only. The address is <http://www.airfield-ops.hill.af.mil/osw/weather.htm>.

Chapter 5

THE METEOROLOGICAL WATCH (METWATCH) PROGRAM

5.1. General. Meteorological Watch (METWATCH) is the process of monitoring changing weather conditions and informing supported agencies that established weather conditions could affect their operations or pose a threat to property or life. Weather advisories, watches, and warnings are issued to provide information to supported agencies to allow them to take appropriate actions.

5.2. Weather Advisories. A weather advisory is a special notice to supported agency that established weather conditions are occurring or are expected to occur. There are two types of advisories, observed and forecast. Observed advisories are issued when the specified weather condition is occurring and is canceled when the condition no longer exists. Forecast advisories are issued when the established weather condition is expected to occur. These advisories are canceled when the condition is no longer expected or if the advisory is superseded by a weather warning. Attachment 8 lists the criteria for weather advisories and the DLT for forecast advisories. Weather advisories are disseminated via the AWDS. When the AWDS is inoperative, advisories will be disseminated to AWDS users via telephone.

5.3. Weather Watch. A weather watch is an informational message to supported agencies that conditions are favorable for the formation of threatening weather. Weather watches are generally issued prior to weather warnings and are intended to provide advance notice of potentially significant weather. Weather watches will be issued on the potential for the weather condition to occur and will be canceled when the potential no longer exists or upgraded to weather warnings when the potential is determined to be significant enough that protective measures must be taken to protect property and life. Attachment 9 lists criteria for weather watches. Weather watches are disseminated via the AWDS. When the AWDS is inoperative, watches will be disseminated to AWDS users via telephone.

5.4. Weather Warning. A weather warning is a special notice to supported agencies that established weather conditions are occurring or are expected to occur. Weather warnings differ from weather advisories in that the severity of the weather conditions is greater for weather warnings. The criteria for weather warnings and the desired lead times are listed in Attachment 9. The DLT for weather warnings are based on the minimum time a supported agency requires to take protective action to protect property and lives. The forecaster will strive to provide at least the DLT specified for each criteria. However, the state of the science does not allow the provision of DLT in all cases. The forecaster will provide valid times on all warnings. Weather warnings will be issued when conditions are expected to occur and canceled when conditions are no longer expected to occur. The forecaster will cancel all warnings, which are no longer required, prior to the end of their valid times. When required, the forecaster will extend the valid times for warnings prior to the end of their valid time. The forecaster will amend a warning when any of the criteria or valid times change. If the amendment includes the addition of other warning criteria, the forecaster will attempt to provide the appropriate lead-time for the new criteria. Warnings are disseminated via the AWDS, with the exception of tornadoes, which will first be telephoned to the Hill Command Post and then sent via AWDS. Each agency with an AWDS terminal (Attachment 10) is the primary dissemination point of contact for all sections within that agency for all weather information. To ensure timely dissemination of critical weather warning information, the BWS should not be telephoned for information that is already disseminated on the AWDS. When the AWDS is inoperative, warnings will be disseminated to AWDS users via telephone.

5.5. Centrally Produced Point Warnings. Air Force Global Weather Center (AFGWC) is responsible for issuing point warnings for several agencies supported by 75 OSS/OSW. 75 OSS/OSW, through LOA, relay these centrally prepared point warnings to these agencies.

Chapter 6

BRIEFING SUPPORT

6.1. General. The 75 OSS/OSW provides a wide variety of in-station and out-of-station briefings. In-station briefings are preferred because of the availability of weather information and displays.

6.2. Flight Weather Briefings. The duty forecaster provides flight weather briefings to all assigned and transient aircraft. All aircraft should have their weather provided through the BWS, either in person or over the phone. Briefings will be documented using *DD Form 175-1, Flight Weather Briefing*, or a MAJ-COM approved substitute. To ensure adequate preparation time, requests for flight weather briefings should be made to the duty forecaster the day prior to the briefing if possible.

6.3. Supervisor of Flying (SOF). When requested, the duty forecaster will brief the SOF about significant weather developments either in-station or via the telephone or hotline. Open communication between the SOF and the duty forecaster is essential for safe aircraft operations at Hill AFB and on the UTTR.

6.4. Pilot to Metro Service (PMSV). The 75 OSS/OSW operates a PMSV radio to provide updated weather information to airborne aircrews and to receive PIREPs. UHF channel 375.2 MHz is continually monitored by the BWS. Due to obstructing terrain, the PMSV is unusable from 010 to 100 degrees beyond 20 nautical miles below twenty thousand feet and from 100 to 150 degrees beyond 25 nautical miles below fifteen thousand feet. Aircrews should relay PIREPs for weather conditions encountered during takeoff/climb-out, approach, landing, and on the ranges when practical. It is extremely critical for the safety of other aircrews that all hazardous or unforecasted flight weather conditions be promptly reported. PIREPs can be passed directly to the BWS via the PMSV, to ATC personnel, or to the SOF. ATC personnel and or the SOF will then pass the PIREP on to the weather station, time permitting. 75 OSS/OSW will disseminate PIREPs locally when weather conditions in the terminal area or the UTTR are significantly different from those briefed or previously forecast, or when the conditions could impact the safety of flight operations. These conditions include, but are not limited to, low-level wind shear below 2,000 feet above ground level (AGL), icing of any type or intensity, moderate or greater turbulence, or any other significant weather phenomena reported.

6.5. Planning Briefings. Upon request, the duty forecaster will provide planning briefings for areas within the Continental United States (CONUS) for up to five days. Coordination is required for planning briefings for areas outside the CONUS or for periods beyond five days.

6.6. Staff Weather Briefings. 75 OSS/OSW will present weather briefings as scheduled or upon request. Unscheduled briefings must be requested at least four hours in advance to allow for adequate preparation. Examples of staff briefings include, but are not limited to, 75 ABW Commander stand-up, 388 FW Commander stand-up, 388 OG Commander stand-up, and Instrument Refresher Course (IRC) briefings.

6.7. Exercise Support and Briefings. 75 OSS/OSW will, manning permitting, participate in both Phase I and Phase II exercises conducted by the 388 FW. This will, as a minimum, include Battle Staff and deployment briefing support.

Chapter 7

SPECIAL TECHNICAL SERVICES

7.1. Hazardous Spills. In the event that toxic chemicals are released into the atmosphere on Hill AFB, the BWS will relay current and forecast weather conditions and toxic corridor information upon request. In the event that toxic chemicals are released into the atmosphere in the vicinity of Hill AFB or the UTTR, the BWS will relay current and forecast weather conditions from the nearest observation site to the Fire Fighter Operations Section (75 CEG/CEFO) or the on-scene toxic spill experts upon request.

7.2. Climatological Data. There is various climatological information available for most major airfield locations around the world available at the BWS. This information is available for use for operational planning purposes. Historical weather data is also available for Hill AFB. The BWS will be the office of primary responsibility for any climatological data requests to the Air Force Combat Climatology Center (AFCCC). Urgency, complexity of the request, and workload dictate the required time to acquire climatological data from AFCCC.

7.3. Electro-Optical Tactical Decision Aids (EOTDA). The BWS is capable of providing electro optics information to support specialized weapons systems and other types of special operations equipment. Planning EOTDA data is available on the AWDS each day flying is scheduled at the UTTR (normally Mon - Fri). Detailed mission-specific EOTDA products are available on a by request basis. Capability exists for infrared, television, or laser sensors. Any aircrew requiring detailed EO support should provide input to the BWS using *OO-ALC FORM 507-2, Mission Specific Electro-Optical Tactical Decision Aid (EOTDA) Forecast Request* (Attachment 12), no later than four hours prior to flight mission brief. If specific target acquisition or lock-on ranges are needed, requests must include specific target information, time over target, and weapon type. All appropriate security safeguards must be maintained. The *OO-ALC form 507-3, Electro-Optical/Infrared Target Decision Aid* (Attachment 13) will be used to provide the requested forecast to the aircrew. Aircrews should provide feedback to the BWS as to the accuracy and usefulness of the EO information provided using *OO-ALC Form 507-1, Electro-Optical Tactical Decision Aid (EOTDA) Feedback* (Attachment 14).

7.4. Nuclear Fallout winds. In the event of a nuclear incident, the BWS will provide upper level wind data to Disaster Preparedness upon request.

7.5. Earthquake Reports. *AFMAN 15-111 (Surface Weather Observations)* requires all USAF weather units with observing and/or forecasting functions located in the United States to obtain and report earthquake occurrences. Immediately following an earthquake, a message is sent to Tinker AWDS via the AWN. The message will contain information outlined in *AFMAN 15-111*. A follow-up message on a (NOAA Form 76-83) will be sent to the United States Geological Survey address listed on the form within 3 working days.

Chapter 8

AUTOMATED WEATHER DISTRIBUTION SYSTEM (AWDS)

8.1. AWDS Concept of Operations. The AWDS is designated as the single point from which weather personnel disseminate weather products. It automates the way in which weather products are prepared in support of customer missions. The AWDS System Manager (ASM) will be designated by the WFC to manage the system. AWDS outage reporting is handled through the BWS and Air Force Global Weather Center (AFGWC) AWDS support branch at Offutt AFB, NE. GTE has a maintenance contract with a local representative who is responsible for all AWDS equipment. Under the contract, GTE is responsible for all outages. Outage logging is accomplished by BWS personnel. In the event that the AWDS central processor in Building 1 becomes inoperative, information will not be transmitted or received by AWDS terminals. Telephone backup systems will be used.

8.2. AWDS Local Training Process. Initial training for all terminal locations was provided by the ASM shortly after equipment installation. Continuing training requirements for equipment and operations will be the responsibility of each agency utilizing the equipment. Any specialized training requests will be coordinated with the ASM.

8.3. AWDS Operational Responsibilities.

8.3.1. 75 OSS/OSW. Weather personnel will provide weather products through AWDS as contained in this regulation. The ASM is responsible for overall system management and will be the AWDS focal point for all agencies with AWDS terminals, to include interaction, outage reporting, and any special training requests. Anytime there are AWDS software revisions, the ASM will notify each agency that could be affected and provide any necessary training on that revision.

8.3.2. AWDS Users. The units listed in Attachment 10 should designate a primary and alternate AWDS monitor to be the focal point of any AWDS issues. Further, units will notify base weather station personnel in case of non-receipt of scheduled weather or Notice to Airmen (NOTAM) data, of any AWDS outages, or if the AWDS terminal will be relocated. Units may be asked to perform simple trouble shooting procedures when outages are reported. If the problem cannot be resolved through these procedures, contract maintenance will be called by 75 OSS/OSW. During AWDS outages, 75 OSS/OSW will pass watches, warnings, and advisories via telephone to AWDS users. To avoid unnecessary delays in relaying critical weather information to aircrews, air traffic control, and command authorities, units with AWDS terminals should use the information provided and refrain from routinely contacting the weather station.

8.3.3. Non-AWDS Users. Due to flight safety concerns, individual organizations that do not have an AWDS terminal should refrain from contacting the base weather station directly. This can cause delays in relaying information to aircrew, air traffic control agencies, and command authorities. Non-AWDS users should call their respective dissemination agency for information or connect to the weather stations homepage and view the latest weather information.

Chapter 9

RECIPROCAL SUPPORT

9.1. General. Mutual support and cooperation are key elements in the 75 OSS/OSW's ability to provide complete and timely weather support to its customers. This section outlines reciprocal support for base agencies and individual unit responsibilities.

9.2. The Command Post will:

9.2.1. Notify 75 OSS/OSW of any accident, mishap, or event in which weather or weather service may be involved by notifying the duty forecaster.

9.2.2. Disseminate all weather warnings, watches, and advisories in accordance with established checklists.

9.3. Flying units will:

9.3.1. Provide 75 OSS/OSW with flying schedules, to include changes, as necessary.

9.3.2. Pass all significant PIREPs to the 75 OSS/OSW through the PMSV radio or the control tower.

9.3.3. Provide Electro-Optics feedback when possible.

9.4. 75 Communications Squadron will:

9.4.1. Provide or arrange for the maintenance of all weather and communications equipment operated by the BWS.

9.4.2. If requested, provide an orientation tour of the location of weather sensors to BWS personnel during certification training.

9.4.3. Provide maintenance of telephones, office equipment, and computers through normal base procedures.

9.5. 75 Civil Engineering Squadron will:

9.5.1. Provide emergency back-up power for weather station operations. Emergency power is generated and supplied to the weather station from the airfield lighting vault, Building 14. Civil Engineering personnel will notify Base Operations (75 OSS/OSCM) and the duty forecaster at least 15 minutes before a scheduled change from commercial to emergency or emergency to commercial power.

9.6. Airfield Operations Flight (75 OSS/OSA) will:

9.6.1. As duties permit, tower personnel will provide a CWW and notify the duty observer of significant changes in the weather including, but not limited to, visibility, ceiling, thunderstorms, lightning, precipitation, and any other weather that may affect flight safety.

9.6.2. Tower will conduct daily operational checks of the PMSV radio when requested by weather. In the event of an extended PMSV outage at the BWS, tower will place an outage advisory on the Automatic Terminal Information System (ATIS) and, workload permitting, monitor 375.2 MHz until a portable radio is available for the BWS.

- 9.6.3. Notify the duty observer of a change in the active runway or runway light settings.
- 9.6.4. Relay all weather related PIREPS to the duty forecaster or observer.
- 9.6.5. In the event of weather station evacuation, provide the observer and forecaster adequate space and access to a telephone and a UHF radio tuned to 375.2 MHz in the control tower, if available.
- 9.6.6. When requested, provide tower indoctrination training to new weather personnel.

9.7. 75 OSS/OSAM will:

- 9.7.1. Disseminate all weather watches, warnings, and advisories in accordance with established checklists.
- 9.7.2. Notify the duty observer upon changes of observed runway conditions and readings.
- 9.7.3. Enter weather information into flight information publications.

9.8. FORMS PRESCRIBED: *OO-ALC Form 507-1, EOTDA Feedback; OO-ALC Form 507-2, Mission Specific EOTDA Forecast Request Form; and OO-ALC Form 507-3 EO/IR Target Decision Aid.*

ROBERT S. LUNDIE, Lt Colonel, USAF
Commander, 75th Operations Support Squadron

Attachment 1**SPECIAL OBSERVATION CRITERIA**

A1.1. Ceiling. A ceiling (the height assigned to the lowest broken or overcast layer of clouds which is predominately opaque) forms or dissipates below, decrease to less than, or if below, increases to equal or exceed:

3,000 ft

1,500 ft

1,000 ft

700 ft

600 ft (FLIPS)

500 ft

400 ft(FLIPS)

300 ft

200 ft (FLIPS)

A1.2. Sky Condition A layer of clouds or obscuring phenomena aloft (i.e., smoke) is observed below 600, 500, or 400 feet and no layer was reported below this height previously.

A1.3. Visibility. Prevailing visibility is observed to decrease to less than, or if below, increases to equal or exceed:

- 3 miles.

- 2 miles.

- 1 1/2 miles. (FLIPS)

- 1 1/4 miles. (FLIPS)

- 1 mile.

- 3/4 mile. (FLIPS)

- 1/2 mile. (FLIPS)

NOTE:

When either the BWS or the tower has visibility of less than 4 miles, a special will be taken if any of the above thresholds are observed by either the tower or the BWS.

A1.4. Runway Visual Range (RVR). The highest value from the designated RVR runway decreases to less than, or if below, increases to equal or exceed 2,400 feet (730m) during the preceding 10 minutes.

A1.5. Tornado/Funnel Cloud. If a tornado or funnel cloud is observed, disappears from sight, or has occurred within the past hour, according to outside sources, and was not observed at the station.

A1.6. Thunderstorm. When a thunderstorm begins or ends.

A1.7. Precipitation.

A1.7.1. Hail begins or ends.

A1.7.2. Freezing Precipitation begins, ends, or changes intensity.

A1.7.3. Ice pellets begin, end, or changes intensity.

A1.7.4. Any other form of precipitation begins or ends.

A1.8. Wind.

A1.8.1. Squall. The 2-minute average speed suddenly increases at least 16 knots and is sustained at 22 knots or more for at least one minute.

A1.8.2. Wind Shift. The wind direction changes by 45 degrees or more in less than 15 minutes and the speed, including gusts, is 10 knots or more throughout the wind shift.

A1.9. Runway Condition Reading (RCR). When RCR is first reported by base operations, or is reported to be different from a previous RCR.

A1.10. Nuclear Accident. A nuclear accident requires a full element special with the remark "AEROB" as the final remark.

A1.11. Other. Any other situation which the observer considers critical to the safety of aircraft operations.

Attachment 2**LOCAL OBSERVATION CRITERIA**

A2.1. Ceiling. A ceiling (the height assigned to the lowest broken or overcast layer of clouds which is predominately opaque) forms or dissipates below, decrease to less than, or if below, increases to equal or exceed:

- 5,000 ft (514 TS)
- 2,500 ft (514 TS)

A2.2. Runway Visual Range (RVR). RVR (may be a single element local) decreases to less than, or if below, increases to equal or exceed:

- 6,000 ft
- 5,000 ft
- 4,000 ft (FLIPS)
- 2,400 ft
- 1,600 ft (AMC)
- 1,200 ft (AMC)

>Visibility conditions for reporting RVR are first observed or no longer exist.

>When no RVR is available (RVRNO) for active runway and RVR conditions are first met.

>When RVRNO is no longer applicable and RVR conditions still exist.

A2.3. Winds. First occurrence of winds of 25 knots or greater on either the midfield or active runway wind sensors.

A2.4. Aircraft Mishap. An aircraft mishap requires a full element local unless there has been a METAR/SPECI in previous ten minutes. The remark "ACFT MISHAP" is added to the remark section, but is **not** transmitted locally or longline.

A2.5. Altimeter Setting. Altimeter setting and pressure altitude locals are taken at a frequency not to exceed 35 minutes when there has been a change of .01 inch Hg or more since the last locally transmitted value.

A2.6. Runway Change. A full element local is taken two minutes after notification of a runway change to allow sensors to stabilize.

A2.7. Ice FOD Advisory. A local with temperature and dew point is taken upon cancellation of ICE FOD ADVISORY.

A2.8. Alert Klaxon. A local containing a minimum of air temperature, wind direction and speed, altimeter setting, and pressure altitude will be taken and transmitted when the Alert Klaxon sounds.

A2.9. Other. Any situation which the observer considers significant to the safety of aircraft operations.

Attachment 3**METEOROLOGICAL EQUIPMENT AND COMMUNICATIONS**

A3.1. Automated Weather Distribution System (AWDS). The AWDS an integrated automated system designed to provide weather, air traffic control, and base operations products to complete the mission. Alphanumeric data, both weather and NOTAM flow through Tinker AFB, Oklahoma. Graphical products are received from the Air Force Global Weather Center located at Offutt AFB, Nebraska. AWDS is the primary dissemination system for observations, forecasts, advisories, watches, warnings, PIREPs, and NOTAMs.

A3.2. Digital Barometer Altimeter Setting Indicator (DBASI ML-658GM)/Aneroid Barometer (ML-102-G). The Digital Barometer Altimeter Setting Indicator and Aneroid Barometer are used to provide measurement of station pressure. Station pressure is used to determine sea-level pressure, altimeter setting, and pressure altitude. These instruments are located in the BWS.

A3.3. Laser Ceilometer (AN/GMQ-13). A laser ceilometer is used to determine the height of the cloud ceiling when the ceiling is at or below 12,000 feet. It is located at the north end of the runway.

A3.4. Lightning Detection System (LDS). The LDS is used to display real-time cloud-to-ground lightning strikes for the entire continental United States. Data is received via satellite communications.

A3.5. Pilot to Metro Service Radio (PMSV). The PMSV operates at a UHF frequency of 375.2 MHz and allows ground-to-air-to-ground radio communications.

A3.6. Rain Gauge (ML-17). A rain gauge is used to measure of precipitation accumulation. The rain gauge is located 150 feet southeast of the control tower.

A3.7. Satellite Imagery Receivers. Weather satellite imagery is an integral part of day-to-day weather operations and is a valuable visual aid for aircrew briefings.

A3.7.1. Ground Station. Geostationary Orbiting Environmental Satellite (GOES) weather satellite imagery is received via satellite communications and stored and displayed on a microcomputer.

A3.7.2. GOES Tap. Geostationary weather satellite imagery is received via a dedicated circuit and stored and displayed on a microcomputer.

A3.8. Temperature/Dew Point Sensors (AN/FMQ-8). Temperature and dew point sensors are used to determine the ambient air temperature and dew points (the temperature the air would have to be cooled to in order to have water vapor condense). These sensors are located east of the midpoint of the runway.

A3.9. Transmissometer (AN/FMN-1A and GMQ-32). A transmissometer is used to electronically measure the visibility when visibility is less than one mile. This sensor is located at the north end of the runway.

A3.10. Weather Surveillance Radar-1988 Doppler (WSR-88D). The WSR-88D is a sophisticated weather radar capable of detecting not only all types of precipitation, but clouds and wind information as well.

A3.11. Wind Measuring Sensors (AN/FMQ-13). The wind measuring sensors are used to determine the wind direction in degrees and speed in knots. Sensors are located at each end and at the midpoint of the runway.

Attachment 4**FORECAST SPECIFICATION**

A4.1. General. The Terminal Aerodrome Forecast will specify the expected occurrence, duration, and intensity of the following weather conditions:

A4.1.1. Ceiling. Ceiling decreases to less than, or if below, increases to equal or exceed the following values:

- 5,000 ft. (514 TS)
- 3,000 ft.
- 1,500 ft.
- 1,000 ft.
- 700 ft.
- 500 ft.
- 300 ft.
- 200 ft.

A4.1.2. Visibility. Visibility decreases to less than, or if below, increases to equal or exceed:

- 3 miles.
- 2 miles.
- 1 1/2 miles.
- 1 mile.
- 1/2 mile.

A4.1.3. Wind. Wind speed change of 10 knots or more, or a direction change of 30 degrees or more when the wind speed (including gusts) is expected to be in excess of 15 knots.

A4.1.4. Precipitation. Any precipitation.

A4.1.5. Thunderstorms. Any thunderstorms.

A4.1.6. Weather Warnings. All forecasted weather warning criteria.

A4.1.7. Icing and Turbulence. Icing or turbulence not associated with thunderstorms, from surface to 10,000 feet mean sea level (MSL) for category II aircraft.

A4.1.8. Low-Level Wind Shear. Low-level wind shear below 2000 feet that is not associated with thunderstorms.

Attachment 5**AMENDMENT CRITERIA**

A5.1. General. The terminal aerodrome forecast will be amended when any of the following are expected to occur or have occurred and are expected to persist for more than 30 minutes.

A5.2. Ceiling. Ceilings decrease to less than, or if below, increase to equal or exceed:

- 3,000 ft.
- 1,000 ft.
- 200 ft.

A5.3. Visibility. Visibility decreases to less than, or if below, increases to equal or exceed:

- 3 miles.
- 2 miles.
- 1/2 mile.

A5.4. Winds. Error in forecast winds of:

- 10 knots or more, including gusts.
- 30 degrees or more when the wind speed, including gusts, is forecasted to be in excess of 15 knots.

A5.5. Precipitation. Precipitation when:

- Freezing precipitation begins or ends.
- The beginning or ending of precipitation causes an advisory or warning to be issued, canceled, or amended.
- The occurrence or non-occurrence of precipitation is deemed operationally significant.

A5.6. Weather Warnings. Warning criteria which occurs or is expected to occur and is not specified in the TAF or was forecast and is no longer occurring, or is no longer expected to occur.

A5.7. Icing or Turbulence. Icing or turbulence of moderate or greater intensity (SFC - 10,000 ft MSL) which occurs or is expected to occur and is not specified in the TAF or was forecast and is no longer occurring, or is no longer expected to occur.

A5.8. Low-Level Wind Shear. Low-level wind shear below 2,000 feet not associated with thunderstorms occurs or is expected to occur and is not specified in the TAF or is forecast but is no longer occurring or expected to occur.

A5.9. Other. Anytime the forecaster considers the forecast to be unrepresentative.

Attachment 6**UTTR FORECAST SPECIFICATION**

A6.1. General. The UTTR forecast will specify the expected occurrence, duration, and intensity of the following weather conditions:

A6.2. Ceiling. Ceiling decreases to less than, or if below, increases to equal or exceed the following values:

- 10,000 ft.
- 4,500 ft.
- 3,000 ft.

A6.3. Visibility. Visibility decreases to less than, or if below, increases to equal or exceed:

- 5 miles.
- 3 miles.

A6.4. Wind. Wind speed change of 10 knots or more, or a direction change of 30 degrees or more when the wind speed (including gusts) is expected to be in excess of 15 knots.

A6.5. Precipitation. Any precipitation.

A6.6. Thunderstorms. Any thunderstorms expected will be described as isolated, few, scattered, or numerous based on the aerial coverage.

A6.7. Altimeter Setting. The lowest altimeter setting expected for the forecast period.

A6.8. Icing and Turbulence. Icing or turbulence not associated with thunderstorms for category II aircraft will be specified as a yes or no. Details of icing and turbulence will be given during the telephone weather brief prior to take-off.

A6.9. Astronomical Data. This includes sunrise, sunset, moonrise, moonset, and percent illumination.

A6.10. Temperature. The forecast maximum take-off temperature at Hill AFB.

A6.11. Pressure Altitude. The forecast maximum and minimum pressure altitude for both the north and south ranges.

A6.12. Contrails. The heights of forecasted contrail formation.

A6.13. Great Salt Lake Temperature. The water temperature of the Great Salt Lake, measured or estimated.

Attachment 7**UTTR FORECAST AMENDMENT CRITERIA**

A7.1. General. The UTTR forecast will be amended when any of the following are expected to occur or have occurred and are expected to persist for more than 30 minutes.

A7.2. Ceiling. Ceilings decrease to less than, or if below, increase to equal or exceed:

- 4,500 ft.
- 3,000 ft.

A7.3. Visibility. Visibility decreases to less than, or if below, increases to equal or exceed:

- 5 miles.
- 3 miles.

A7.4. Altimeter Setting. When the observed altimeter is more than 0.05 inches lower than the minimum forecasted.

A7.5. Thunderstorms. When unforecast thunderstorms are detected or expected to enter either range or if forecasted thunderstorms are no longer expected to occur.

A7.6. Flight Hazards. When icing or turbulence occurs or is expected to occur and is not specified in the forecast or was forecast and is no longer occurring, or is no longer expected to occur.

A7.7. Other. Anytime the forecaster considers the forecast to be unrepresentative.

Attachment 8

WEATHER ADVISORIES

A8.1. Observed Weather Advisories. The BWS observer will issue/cancel the following observed weather advisories pertinent to flight operations and resource protection over the AWDS. Attachment 11 details the notification matrix for agencies that do not have an AWDS terminal.

A8.1.1. Observed Lightning Advisory. Issued when lightning is observed within a 10 nautical mile radius of the center of the airfield complex. This advisory is superseded when an observed lightning warning is issued or is canceled when lightning has not been observed within 10 nautical miles for at least 15 minutes.

A8.1.2. Ice FOD.

A8.1.2.1. Ice FOD 1 Advisory. Issued when the air temperature is below 45F and precipitation or fog is present or when the air temperature is below 45F and the difference between the dew point temperature and air temperature is less than 10 degrees. Ice FOD will be canceled when criteria no longer exist. A local observation carrying the current air temperature and dew point will be issued upon cancellation.

A8.1.2.2. Ice FOD 2 Advisory. Issued when the air temperature is below 45F and standing water, snow, ice, or a mixture exists on the ramp or runway. Ice FOD will be canceled when criteria no longer exist. A local observation carrying the current air temperature and dew point will be issued upon cancellation.

A8.1.3. Gust Spread Advisory. Issued when the instantaneous reading between peak and lull is greater than or equal to 15 knots. This advisory is canceled when gust spread criteria has not been observed for one hour.

A8.1.4. Wind Chill Advisory. Issued when the wind chill calculated using the peak gust during the last 15 minutes is less than or equal to 0 degrees Fahrenheit. The wind chill will be appended to all record observations until criteria are no longer met. This advisory is canceled when conditions are no longer met.

A8.2. Forecast Weather Advisories. The BWS forecaster will issue/cancel the following forecast weather advisories pertinent to flight operations and resource protection over the AWDS. Agencies with AWDS terminals will notify subordinate agencies that do not have AWDS.

A8.2.1. Weak Thunderstorm Advisory. Thunderstorms with winds greater than 24 knots but less than 35 knots and/or hail less than 1/2 inches in diameter. The desired lead-time is 30 minutes. This advisory is canceled when conditions are no longer expected.

A8.2.2. Surface Wind Advisory. Issued when surface winds not associated with thunderstorms are observed to be greater than 24 knots but less than 35 knots. The desired lead-time is 30 minutes. This advisory is canceled when conditions are no longer expected.

A8.2.3. Cross Wind Advisory. Issued when cross winds are observed to be greater than 24 knots. The desired lead-time is 30 minutes. This advisory is canceled when conditions are no longer expected.

A8.2.4. Low-Level Wind Shear (LLWS) Advisory. Issued when LLWS below 2,000 feet Above Ground Level (AGL) not associated with thunderstorms is occurring based on PIREPs or other observation techniques. The desired lead-time is 30 minutes. This advisory is canceled when conditions are no longer expected.

Attachment 9**WEATHER WATCHES AND WARNINGS**

A9.1. Weather Watches. Weather watches will be issued on the potential for the weather condition to occur and will be canceled when the potential no longer exists or upgraded to weather warnings when the potential is determined to be significant enough that protective measures must be taken to protect property and life.

A9.1.1. Weather Watch Criteria.**CRITERIA**

Tornado

Severe thunderstorms (Winds >50 knots and/or Hail > 3/4 inches)

Lightning within 25 nautical miles (expected within 30 minutes)

Snow accumulation (> 2 inches in 12 hours)

Freezing precipitation

A9.2. Weather Warnings. Weather warnings will be issued when the potential for established weather criteria is significant enough that protective measures must be taken to protect property and life. All warnings are valid for the area within a five nautical mile radius of the center of the runway complex. All weather warnings are forecasts, that is, they are issued prior to the onset of the expected condition. The exception to this is the lightning observed within five nautical miles warning. When lightning is actually observed within a five nautical miles radius of the center of the airfield complex (i.e. visual sighting by weather observer, forecasters, tower personnel, ramp personnel or other reliable sources) this observed warning will be issued. Distance is determined by distance of lightning strokes from the observation site based on known land marks, using the WSR-88D Doppler Radar when thunderstorms are in progress within five nautical miles of the airfield complex, using the Lightning Detection System (LDS) display (NOTE: LDS only displays cloud to ground to lightning strikes), and/or using the "FLASH TO BANG METHOD". Count the seconds from when lightning is seen to the time thunder is heard. Divide the number of seconds by five (i.e. ten seconds = two miles). This warning is canceled when it has been at least 15 minutes since any of the above criteria was last met.

Table A9.1. Weather Warning Criteria and Desired Lead Times.

CRITERIA	DESIRED LEAD TIME
Tornado	15 minutes
Severe Thunderstorms (Winds ≥ 50 knots and/or Hail $\geq 3/4''$)	60 minutes
Severe Non-Convective Winds ≥ 50 knots	60 minutes
Strong Thunderstorms (Winds $\geq 35 < 50$ knots and/or Hail $\geq 1/2'' < 3/4''$)	60 minutes
Strong Non-Convective Winds $\geq 35 \leq 49$ knots	60 minutes
Freezing Precipitation	60 minutes
Snow Accumulation ($\geq 2''$ in 12 hours)	6 hours
Lightning Observed within 5 nautical miles	As Observed

NOTE:

Watches and warnings will specify size, strength, or amounts expected, as applicable.

Attachment 10

TERMINALS

Table A10.1. AWDS TERMINALS

UNIT	BLDG#	Advisories/Watches/Warnings
34th FIGHTER SQUADRON (34 FS/DO)	5	ALL
421st FIGHTER SQUADRON (421 FS)	5	ALL
466th FIGHTER SQUADRON (466 FS)	593	ALL
4th FIGHTER SQUADRON (4 FS/DO)	119	ALL
AIR CONTROL SQUADRON (729 ACS)	1938	C,G,I-V
ALERT CONTROL FAC	777	ALL
ATC (X4) (75 OSS/OSA)	10	ALL
BASE OPS (X3) (75 OSS/OSAMB)	1	C,F,O-V
CE EMER SVC CALL (75 ABW/CEO)	15	C,E,F,G,J-V
CLOVER CONTROL (299 RCS/DOA)	1276	ALL
FUELS FLIGHT (75 ABW/LGSF)	914	A,B,C,F,G,J-V
HAFB COMMAND POST (75 ABW/CP)	133	ALL
MAINT CONTROL (419 FW/MCC)	593	ALL
419th COMMAND POST (419 FW/CP)	593	ALL
MAINT OPS CONT CTR (388 OSS/MCC)	36	ALL
MUNITIONS (649 MUNS)	800	ALL
OPS GROUP (388 OG/CC)	36	ALL
388th RANGE SQUADRON	1274	C,G,I-V
514th FLIGHT TEST SQUADRON (514 FLTS/DO)	233	ALL

NOTES:

Advisories _____ Watches _____ Warnings _____

A-Ice FOD 1 J-Tornado O-Tornado

B-Ice FOD 2 K-SVR Thunderstorm P-SVR Thunderstorm

C-Lightning Observed L-Snow Q-STR Thunderstorm

D-Gust Spread M-Freezing Precipitation R-SVR Winds > 50 knots

E-Wind Chill N-Lightning within 25 nm S-STR Winds > 35 < 49 knots

F-Weak Thunderstorms T-Freezing Precipitation

G-Low-Level Wind Shear U-Snow > 2" in 12 Hrs

H-Non-Convective Winds > 25 < 34 V-Observed Lightning

I- Cross Winds >24 knots

Attachment 11
NOTIFICATION

Table A11.1. NOTIFICATION MATRIX

LI Notifications	649 MUNS	LIC	LIO	LIR	LIL	LIWO	HAFB Museum
Advisories							
Ice Fod 1	X	X	X	X	X	X	X
Ice Fod 2	X	X	X	X	X	X	X
Lightning Observed within 10nm	X	X	X	X	X	X	X
Gust Spread (> 15Kts)	X	X	X	X	X	X	X
Wind Chill (< 0 Fahrenheit)	X	X	X	X	X	X	X
Weak Thunderstorms (Winds 25-34Kts and/or Hail < 1/2")	X	X	X	X	X	X	X
Low-Level Wind Shear	X	X	X	X	X	X	X
Non-Convective Winds (25-34Kts)	X	X	X	X	X	X	X
Cross Winds (> 25Kts)	X	X	X	X	X	X	X
Warnings							
Tornado	X	X	X	X	X	X	X
Severe Thunderstorm (Winds > 50Kts and/or Hail > 3/4")	X	X	X	X	X	X	X
Severe Non-Convective Winds (>50Kts)	X	X	X	X	X	X	X
Strong Thunderstorm (Winds 35-49Kts and/or Hail > 1/2 < 3/4")	X	X	X	X	X	X	X
Strong Non-Convective Winds (35-49Kts)	X	X	X	X	X	X	X
Lightning Observed (within 5nm)	X	X	X	X	X	X	X
Freezing Precipitation	X	X	X	X	X	X	X
Snow > 2" in 12 Hours	X	X	X	X	X	X	X
Watches							
Tornado	X	X	X	X	X	X	X
Severe Thunderstorm (Winds > 50Kts and/or Hail > 3/4")	X	X	X	X	X	X	X
Lightning within 25nm (30 minutes)	X	X	X	X	X	X	X
Snow > 2" in 12 Hours	X	X	X	X	X	X	X
Freezing Precipitation	X	X	X	X	X	X	X

388 MOC Notifications	421 FS	34 FS	4 FS	388 OSS	388 MXS	388 SOF
Advisories						
Ice Fod 1				X	X	X
Ice Fod 2				X	X	X
Lightning Observed within 10nm	X	X	X	X	X	X
Gust Spread (≥ 15 Kts)				X	X	
Wind Chill (≤ 0 Fahrenheit)				X	X	
Weak Thunderstorms (Winds 25-34Kts and/or Hail $< 1/2$ ")				X	X	
Low-Level Wind Shear				X	X	X
Non-Convective Winds (25-34Kts)				X	X	
Cross Winds (≥ 25 Kts)				X	X	X
Warnings						
Tornado				X	X	X
Severe Thunderstorm (Winds ≥ 50 Kts and/or Hail $\geq 3/4$ ")				X	X	X
Severe Non-Convective Winds (≥ 50 Kts)				X	X	X
Strong Thunderstorm (Winds 35-49Kts and/or Hail $\geq 1/2 < 3/4$ ")				X	X	X
Strong Non-Convective Winds (35-49Kts)				X	X	X
Lightning Observed (within 5nm)	X	X	X	X	X	X
Freezing Precipitation				X	X	X
Snow > 2 " in 12 Hours				X	X	X
Watches						
Tornado				X	X	X
Severe Thunderstorm (Winds ≥ 50 Kts and/or Hail $\geq 3/4$ ")				X	X	X
Lightning within 25nm (30 minutes)	X	X	X	X	X	X
Snow > 2 " in 12 Hours				X	X	X
Freezing Precipitation				X	X	X

NOTE:

Rainbow announcement of the nature of severe weather threat
is broadcast over 388 FW Maintenance radio net

75 CEG Notifications	Snow Control	Disaster Preparedness	EOD
Advisories			
Ice Fod 1			
Ice Fod 2			
Lightning Observed within 10nm	x	x	x
Gust Spread (≥ 15 Kts)			
Wind Chill (≤ 0 Fahrenheit)			
Weak Thunderstorms (Winds 25-34Kts and/or Hail $< 1/2$ ")			
Low-Level Wind Shear			
Non-Convective Winds (25-34Kts)			
Cross Winds (≥ 25 Kts)			
Warnings			
Tornado	x	x	x
Severe Thunderstorm (Winds ≥ 50 Kts and/or Hail $\geq 3/4$ ")	x	x	x
Severe Non-Convective Winds (≥ 50 Kts)	x	x	x
Strong Thunderstorm (Winds 35-49Kts and/or Hail $\geq 1/2 < 3/4$ ")	x	x	x
Strong Non-Convective Winds (35-49Kts)	x	x	x
Lightning Observed (within 5nm)	x	x	x
Freezing Precipitation			
Snow > 2 " in 12 Hours			
Watches			
Tornado	x	x	x
Severe Thunderstorm (Winds ≥ 50 Kts and/or Hail $\geq 3/4$ ")	x	x	x
Lightning within 25nm (30 minutes)	x	x	x
Snow > 2 " in 12 Hours			
Freezing Precipitation			

75 CS Notifications	SC-MPI	SC-MPC	SCM-PO	NET-COM	SC-MEA	SC-MER	SCST	COM-PUT-ER RM
Advisories								
Ice Fod 1								
Ice Fod 2								
Lightning Observed within 10nm	x	x	x	x	x	x	x	x
Gust Spread (≥ 15 Kts)								
Wind Chill (≤ 0 Fahrenheit)		x			x	x		
Weak Thunderstorms (Winds 25-34Kts and/or Hail $< 1/2$ ")								
Low-Level Wind Shear								
Non-Convective Winds (25-34Kts)								
Cross Winds (≥ 25 Kts)								
Warnings								
Tornado								
Severe Thunderstorm (Winds ≥ 50 Kts and/or Hail $\geq 3/4$ ")								
Severe Non-Convective Winds (≥ 50 Kts)								
Strong Thunderstorm (Winds 35-49Kts and/or Hail $\geq 1/2 < 3/4$ ")								
Strong Non-Convective Winds (35-49Kts)								
Lightning Observed (within 5nm)	x	x	x	x	x	x	x	x
Freezing Precipitation								
Snow > 2 " in 12 Hours								
Watches								
Tornado								
Severe Thunderstorm Winds ≥ 50 Kts and/or Hail $\geq 3/4$ ")								
Lightning within 25nm (30 minutes)	x	x	x	x	x	x	x	x
Snow > 2 " in 12 Hours								
Freezing Precipitation								

BASEOPS Notifications	Fire Station	Tran- sient Alert	Securi- ty Po- lice	Mobil- ity Con- trol Center	Motor Pool	Servic- es
Advisories						
Ice Fod 1						
Ice Fod 2						
Lightning Observed within 10nm	x	x	x	x	x	x
Gust Spread (> 15Kts)						
Wind Chill (< 0 Fahrenheit)	x	x	x	x	x	x
Weak Thunderstorms (Winds 25-34Kts and/or Hail < 1/2")						
Low-Level Wind Shear						
Non-Convective Winds (25-34Kts)						
Cross Winds(> 25Kts)						
Warnings						
Tornado	x	x	x	x	x	x
Severe Thunderstorm (Winds \geq 50Kts and/or Hail \geq 3/4")	x	x	x	x	x	x
Severe Non-Convective Winds (\geq 50Kts)	x	x	x	x	x	x
Strong Thunderstorm (Winds 35-49Kts and/or Hail \geq 1/2 < 3/4")	x	x	x	x	x	x
Strong Non-Convective Winds (35-49Kts)	x	x	x	x	x	x
Lightning Observed (within 5nm)	x	x	x	x	x	x
Freezing Precipitation	x	x	x	x	x	x
Snow > 2" in 12 Hours	x	x	x	x	x	x
Watches						
Tornado						
Severe Thunderstorm (Winds \geq 50Kts and/or Hail \geq 3/4")						
Lightning within 25nm (30 minutes)	x	x	x	x	x	x
Snow > 2" in 12 Hours						
Freezing Precipitation						

[illegible]

Severe Thunderstorm (Winds ≥ 50Kts and/or Hail ≥ 3/4")			X	X	X	X	X	X					X
Lightning within 25nm (30 minutes)									X		X	X	X
Snow > 2" in 12 Hours									X	X			
Freezing Precipitation			X	X								X	

[illegible]

Snow > 2" in 12 Hours	x	x	x	x	x	x	x	x	x	x	x	x	x
Watches													
Tornado	x	x	x	x	x	x	x	x	x	x	x	x	x
Severe Thunderstorm (Winds \geq 50Kts and/or Hail \geq 3/4")	x	x	x	x	x	x	x	x	x	x	x	x	x
Lightning within 25nm (30 minutes)	x	x	x	x	x	x	x	x	x	x	x	x	x
Snow > 2" in 12 Hours	x	x	x	x	x	x	x	x	x	x	x	x	x
Freezing Precipitation	x	x	x	x	x	x	x	x	x	x	x	x	x

SERVICES Notifications	Base Pools	Golf Course	Com- mis- sary	Base Gyms
Advisories				
Ice Fod 1				
Ice Fod 2				
Lightning Observed within 10nm	x	x	x	x
Gust Spread (> 15Kts)				
Wind Chill (< 0 Fahrenheit)				x
Weak Thunderstorms (Winds 25-34Kts and/or Hail < 1/2")				
Low-Level Wind Shear				
Non-Convective Winds (25-34Kts)				
Cross Winds(> 25Kts)				
Warnings				
Tornado				
Severe Thunderstorm (Winds \geq 50Kts and/or Hail \geq 3/4")				
Severe Non-Convective Winds (\geq 50Kts)				
Strong Thunderstorm (Winds 35-49Kts and/or Hail \geq 1/2 < 3/4")				
Strong Non-Convective Winds (35-49Kts)				
Lightning Observed (within 5nm)	x	x	x	x
Freezing Precipitation				
Snow > 2" in 12 Hours				
Watches				
Tornado				
Severe Thunderstorm (Winds \geq 50Kts and/or Hail \geq 3/4")				

Lightning within 25nm (30 minutes)	x	x	x	x
Snow > 2" in 12 Hours				
Freezing Precipitation				

LM Notifications	LM SS	LM SM	LM SMD	LM SMC	LM SMA	LM- SIP	LM SMT	LM ST
Advisories								
Ice Fod 1								
Ice Fod 2								
Lightning Observed within 10nm	x	x	x	x	x		x	x
Gust Spread (≥ 15 Kts)								
Wind Chill (≤ 0 Fahrenheit)								
Weak Thunderstorms (Winds 25-34Kts and/or Hail $< 1/2$ ")								
Low-Level Wind Shear								
Non-Convective Winds (25-34Kts)								
Cross Winds (≥ 25 Kts)								
Warnings								
Tornado	x	x	x	x	x	x	x	x
Severe Thunderstorm (Winds ≥ 50 Kts and/or Hail $\geq 3/4$ ")	x	x	x	x	x	x	x	x
Severe Non-Convective Winds (≥ 50 Kts)	x	x	x	x	x	x	x	x
Strong Thunderstorm (Winds 35-49Kts and/or Hail $\geq 1/2 < 3/4$ ")	x	x	x	x	x	x	x	x
Strong Non-Convective Winds (35-49Kts)	x	x	x	x	x	x	x	x
Lightning Observed (within 5nm)	x	x	x	x	x		x	x
Freezing Precipitation								
Snow > 2" in 12 Hours								
Watches								
Tornado	x	x	x	x	x	x	x	x
Severe Thunderstorm (Winds ≥ 50 Kts and/or Hail $\geq 3/4$ ")	x	x	x	x	x	x	x	x
Lightning within 25nm (30 minutes)	x	x	x	x	x	x	x	x
Snow > 2" in 12 Hours								
Freezing Precipitation								

Attachment 12
OO-ALC FORM 507-2

MISSION SPECIFIC ELECTRO-OPTICAL TACTICAL DECISION AID (EOTDA) FORECAST REQUEST			
<i>Fill out this form as completely as possible. If any other information might be helpful to the forecaster add it under "OTHER". Fax this form to the Hill Air Force Base Weather Flight, extension 7-0092. 24 hours of leadtime is requested. One hour is the minimum. If data makes this form classified, label appropriately and hand-carry to the weather station in Building 1.</i>			
1. DATE	2. SQUADRON	3. PILOT	
16 Feb 73	466 FS	MAJOR JONES	
4. LATITUDE AND LONGITUDE OF TARGET			
113°33'W 50°22'N			
5. TIME OVER TARGET	6. TARGET TYPE		
1600	BRIDGE, ABOUT 150FT LONG, 30FT WIDE, 25FT HIGH		
7. ORIENTATION OF TARGET			
BRIDGE RUNS NORTH TO SOUTH			
8. ATTACK ALTITUDE (Height above ground level)		9. HEADING	
10,000 FEET		270	
10. SENSOR TYPE			11. NEED BRIEFING BY
LGB/LANTRIN			17 Feb 96
13. OTHER			

Attachment 13
OO-ALC FORM 507-3

ELECTRO-OPTICAL/INFRARED TARGET DECISION AID					
1. TIME-OVER-TARGET 1200L		2. TARGET WEATHER SCT020 BKN040 7+ 18020G30			
3. WIND (K=Thousand) SURFACE 1820 2K 1820 4K 2030 6K 2240 K _____ K _____					
4. SUNRISE 0800L	5. SUNSET 1600L	6. ELEVATION 38	7. AZMTH 120		
8. MOONRISE 1600L	9. MOONSET 2000L	10. ELEVATION NA	11. AZMTH NA	12. PERCENT ILLUMINATION NA	
13. PERCENT TRANSMISSIVITY 72		14. INFRARED RANGE 12		15. ABSOLUTE HUMIDITY 4.8	
TARGET	HEIGHT ABOVE GROUND LEVEL ALTITUDE/HEADING	CROSS-OVER	SENSOR 1	SENSOR 2	SENSOR 3
MIG 29	120/850	15L	10	5	3
BRIDGE	050/270	18L	12	6	4
NOTES: IF SMOKE IS PRESENT OVER TARGET RANGES WILL BE 50% LESS					
NUMBERS 1, 2, AND 3 REFER TO THE SAME SENSORS AS THE DAILY AUTOMATED WEATHER DISSEMINATION SYSTEM (AWDS) ELECTRO-OPTICAL FORECAST.					
OO-ALC FORM 507-3, FEB 96 (EF-V1) (PerFORM PRO)					

Attachment 14
ALC-OO FORM 507-1

ELECTRO-OPTICAL TACTICAL DECISION AID (EOTDA) FEEDBACK			
<i>Return form to the Hill Air Force Base Weather Flight via base mail. Please be as specific as possible. Numbers "1, 2, and 3" refer to the same sensors as on the daily Automatic Weather Dissemination System (AWDS) Electro-Optical (EO) forecast. If other sensors are used write them in the "other" column. If data added to the "comments" or "other" column makes this form classified, label appropriately and have this hand carried to the weather station in Building 1.</i>			
1. DATE	2. SQUADRON	3. PILOT	
12 Jun 96	466 FS	CAPT REYNOLDS	
4. LOCATION OF TARGET			
WILDCAT AREA			
5. TIME OVER TARGET	6. TARGET TYPE	7. ORIENTATION OF TARGET	
16 50	EARTH BUNKER	DOOR FACING SOUTH	
8. ATTACK ALTITUDE (Height above ground level)		9. HEADING	
9000 FEET		020	
10. CEILINGS	11. PRECIPITATION	12. WINDS	
BKN 150 OVC200	NONE	09025 AT FL150	
13. TARGET BACKGROUND			
<input type="checkbox"/> DRY SOIL <input type="checkbox"/> WET SOIL <input type="checkbox"/> SNOW <input checked="" type="checkbox"/> PATCHY SNOW			
14. SENSOR DATA (in nautical miles)			
1 <u>6</u> *2* _____ *3* <u>3</u> OTHER _____ HOT-TO-COLD <u>BUNKER HOT</u>			
15. COMMENTS			
BUNKER WAS VERY LARGE. 100FT LONG 50FT WIDE 20FT HIGH. IT WAS COVERED WITH DIRT WHICH PATCHES OF SNOW ON IT. THE "FRONT DOOR" WAS THE HOTTEST SPOT.			